

REMARKS

Claims 1-152 were pending in the present application as of the issuance of the Office Action.

Claims 40-42, 99, 101, 102, 140, 150, and 151 have been cancelled without prejudice or disclaimer, but not in response to the present restriction requirement.

Claims 29, 75, 131, and 147 have been herein amended.

Applicants submit the above noted amendments and the following remarks, entry and consideration of which is respectfully requested. Applicants further submit that the above noted amendments do not introduce any new matter, and additionally, each of the above-noted amendments merely clarifies or removes typographical errors from the claims. As such, Applicants submit that the above noted amendments have not been made in response to any substantive prior art rejection, and therefore, each claim submitted herein is entitled to its full scope of equivalents.

Reconsideration and allowance of pending claims 1-39, 43-98, 100, 103-139, and 152 is respectfully requested in view of the following.

Response to Restriction Requirement

Turning to the substance of the Office Action, the Examiner has taken the position that claims 1 through 152 contain four independent species. Therefore, the Examiner has required Applicants to elect one of the four species for prosecution in the current application. The Examiner has grouped the four species as follows:

Group I Figures 1a, 1b and 3a;

Group II Figures 2a, 2b and 3b;

Group III Figure 4a; and

Group IV Figure 4b

In reviewing the species election, Applicants note that a restriction is not appropriate where an application relates to one invention or a group of inventions so linked as to form a single general inventive concept (unity of invention). PCT Rule 13.1. A proper request for restriction requires that the 1) the disclosed inventions be independent or distinct as claimed, and 2) place a serious burden

on the Examiner if the restriction was not established. MPEP § 803(I). Upon compelling a restriction requirement, Examiners must provide reasons and/or examples to support their conclusions. MPEP § 803(II).

Because Groups I-IV relate to a single inventive concept and are not independent or distinct as claimed, nor would there be a serious burden on the Examiner, a restriction in this case is improper.

A. The vibratory devices present in each disclosed embodiment constitute the common technical feature linking Groups I-IV.

Contrary to what is alleged in the Office Action, Applicants respectfully submit that the above-captioned application relates to a single general inventive concept under PCT Rule 13.1. Specifically, when a group of inventions is claimed, unity of invention is fulfilled when there is a technical relationship among the inventions that involves one or more of the same or corresponding “special technical features.” PCT Rule 13.2. In this context, the term “special technical features” means those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

In the present application, the common technical feature linking the subject matter of claims 1-39, 43-98, 100, 103-139, and 152 is the use of “a vibratory device that generates vibratory energy for agitating at least one of the expansion device and/or the expandable tubular member.” *See, Abstract.* Each of the above-listed Groups employs at least one vibrating device as a common technical feature over the prior art. Whether there is one, two or even more vibratory devices utilized in the embodiment, the inventive concept is the same; *i.e.*, using vibratory energy to assist in tubular expansion.

As disclosed in the specification, each vibratory device disclosed in Groups I-IV may operate to: 1) reduce contact and/or dynamic friction between the tubular member and the expansion device, or 2) increase the plasticity/formability of the tubular member as a result of vibration absorption. Para. [0024]. Furthermore, use of the vibratory devices may also reduce the need for lubrication between the interior wall of the tubular member and the expansion device. Para. [0024]; *see also* Para. [0044].

Additional figures, and their corresponding claims not noted by the Examiner, also indicate the vibratory device as the common technical feature. In particular, Fig. 1c illustrates experimental testing and conclusions relating to the vibrational effects in injected fluid. Figs. 5a and 5b, and their corresponding claims, relate to measuring and enhancing the effects of the vibratory energy generated by the vibratory devices disclosed in Groups I-IV. Para. [0052]. Lastly, Fig. 6 discloses a method which determines the “optimal vibrational energy parameters to be used during an expansion operation” thereby minimizing the required radial expansion forces. Para. [0058]. Clearly, the disclosed vibratory devices are the common technical feature linking claims 1-39, 43-98, 100, 103-139, and 152.

Therefore, Applicants submit that the present application does not lack unity of invention, as there is a technical relationship among Groups I-IV that involves a common special technical feature, namely, generating vibratory energy for agitating at least one of the expansion device and/or the expandable tubular member. Moreover, because the specification describes several embodiments using obvious alternatives that accomplish the same effect, the Groups are “obvious variants of each other based on the current record.” Office Action, p.3. Consequently, Applicants submit that all of the inventions set forth in claims 1-39, 43-98, 100, 103-139, and 152 (Groups I-IV) have the same special technical feature and therefore should be regarded as being so linked as to form a single general inventive concept under PCT Rule 13.1.

B. Groups I-IV are not independent because they are connected in design, operation and effect.

The Examiner asserts that “the species are independent or distinct because claims to the different species recite the mutually exclusive characteristics of such species.” Office Action, p.3. Inventions are classified “independent,” however, when there is no disclosed relationship between the inventions; namely, the inventions must be unconnected in design, operation, and effect. MPEP § 802.1(I). In the present application, however, Applicants respectfully submit that the disclosed embodiments of Groups I-IV are related in design, operation and effect.

1) Design

Each disclosed embodiment in Groups I-IV describes an apparatus or system for radially expanding and plastically deforming an expandable tubular member comprising an expansion device, a vibratory device, and an actuator. *See* claims 1, 48, and 104. While each Group clearly employs some type of expansion and vibratory device, the Examiner maintains that “all of the independent claims refer to an actuator, which is not present in Species I and II.” Office Action, p.3. An actuator, however, is commonly known to those skilled in the art as a device for moving or controlling a mechanism or system. In accordance with this definition, Groups I-IV all employ some type of “actuator.” Groups III & IV disclose a conventional mechanical actuator, operable to displace the expansion cone in a direction away from a locking device. Groups I & II, on the other hand, each disclose two types of actuators, a hydraulic cylinder and a rotary expansion device, both operable to displace the expansion cone in a desired direction relative to the tubular. Consequently, Groups I-IV are not independent in design.

2) Operation

Moreover, the disclosed embodiments of Groups I-IV each operate similarly. To radially expand and plastically deform an expandable tubular member, each embodiment forces an expansion device into a non-expanded portion of the tubular member. At the same time, a vibratory device is utilized to reduce the contact and/or dynamic friction coefficient between the interior surface of the tubular member and the expansion device, and also to increase the plasticity and formability of the tubular member. As a result, Groups I-IV operate in the same way.

3) Effect

As described above, the effect of the disclosed embodiments in Groups I-IV is similar; *i.e.*, applying vibratory energy to assist in tubular expansion. Whether the disclosed embodiment expands tubular members by hydraulic means, rotary means, or mechanically actuated means, each embodiment applies vibratory energy to facilitate more effective tubular expansion. It matters not whether the vibratory device is located above, below, or both above and below the expansion device, the effect remains the same. As a result, Applicants submit that Groups I-IV are not independent in effect.

As required by the MPEP, no reasons or examples were provided by the Examiner to support the conclusion that Groups I-IV are independent or distinct as claimed, and, therefore, Applicants submit that a *prima facie* case for the species restriction has not been properly established.

C. There would be no serious search burden on the Examiner because Groups I-IV do not comprise mutually exclusive characteristics.

The Examiner asserts further that “[t]here is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics.” Office Action, p.3. To support the assertion, the Examiner states that each Group will “require a different field of search,” or that the prior art applicable to one Group will not apply to the others, or that the Groups will likely raise different non-prior art issues. Office Action, p.3. Applicants respectfully disagree.

“Where the classification is the same and the field of search is the same and there is no clear indication of separate future classification and field of search, no reasons exist for dividing among independent or related inventions.” MPEP § 808.02(C). As explained above, each disclosed embodiment in Groups I-IV describes an apparatus/system that radially expands and plastically deforms an expandable tubular member, aided by the use of vibratory devices. Clearly, the classification of the Groups is the same, and the field of search will likely center around one technology, expandable tubulars. Furthermore, there is no clear indication of separate future classification or field of search, nor does the Examiner provide reasons and/or examples to support this conclusion, as required. Hence, no reason exists for requiring a division of Groups I-IV.

Conclusion

In response to Examiner’s restriction requirement, Applicants elect with traverse for prosecution herein Group III, corresponding to Figure 4a. Applicants respectfully submit that claims 1-39, 43-98, 100, 103-139, and 152 are readable on the elected Group.

In view of the foregoing remarks, it is respectfully submitted that the application contains groups of inventions which are so linked as to form a single general inventive concept under PCT Rule 13.1. Accordingly, it is requested that the unity of invention objection be withdrawn. If, however, the Examiner maintains as final the unity of invention objection, Applicant will take the position that the Examiner has admitted one species to be patentable over the other, and that any

prior art must be closer to the elected species than the non-elected species to render the elected species unpatentable.

Applicants submit that all matters set forth in the Office Action have been addressed. Accordingly, it is believed that all claims are in condition for allowance. Favorable consideration and an early indication of allowability are respectfully requested.

Should the Examiner deem that an interview with Applicants' undersigned attorney would expedite the disposition of this application, the Examiner is encouraged to call the undersigned attorney at the telephone number indicated below.

Respectfully submitted,



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